

Abstract of the Disclosure

Disclosed is a managed reliability storage system and method. A data storage system comprises a plurality of storage devices and at least one storage device controller and may also include additional storage device controllers, one or more host systems, and one or more network connections. Aspects of the invention include reliable data storage formats, planned reliability management, threshold reliability management, and software data recovery. Reliable data formats include fault tolerant storage formats such as RAID and implementations thereof. Planned reliability management includes monitoring of system usage and adjustment of usage reflecting an optimal usage model, scheduled and event driven diagnostic execution and conditional adjustment of operating parameters of storage system components. Software data recovery provides copying and reconstruction of data through redundant data formats including parity, ECC, RLL and others encoding methods. Embodiments of the invention provide an opportunity for increased storage system reliability through scheduled or event driven “tune ups” of system usage and of system components, including low level manufacturing parameters, reducing long term storage costs.